

ORIGINAL

IN PARTE OR LATE FILED

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:
Establishment of Rules and Policies for the
Digital Audio Radio Satellite Service in the
2310-2360 MHz Frequency Band

RECEIVED
MAR 22 2000
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY
IB Docket No. 95-91
GEN Docket No. 90-357

Supplemental Reply Comments of Sirius Satellite Radio

Sirius Satellite Radio Inc. ("Sirius") submits these Supplemental Reply Comments in response to the Reply Comments filed by Metricom, Inc. ("Metricom"), MCI WorldCom, Inc. ("MCI WorldCom"), and Aerospace & Flight Test Radio Coordinating Council ("AFTRCC") on March 8, 2000 in the above-captioned proceedings. These Reply Comments do not refute the technical data provided in Sirius' Supplemental Comments and should not be given substantial consideration.

First, the same Wireless Communications Service ("WCS") providers who claim that the Commission must impose WCS interference rules on satellite digital audio radio service ("satellite DARS") once adamantly opposed those interference rules for their own service. Second, the Commission should not consider the arguments raised by Metricom and MCI WorldCom because they provide no support for their claims, technical or otherwise. Third, while Sirius agrees that AFTRCC's systems must be protected from interference, satellite DARS repeaters will not interfere with these systems.

No. of Copies rec'd
List ABCDE

0+4

I. WCS Providers Have Previously Opposed the Rules They Now Want to Apply to Satellite DARS

Metricom's position on interference in this proceeding is a sudden and unexplained conversion from its prior adamant opposition to emission limits for WCS. In fact, many of Metricom's arguments in the Part 27 proceeding support Sirius' views in this proceeding.¹ Sirius certainly agrees with Metricom that the "small percentage of downconverters which may be affected certainly does not justify Commission action which affects [an] entire [communications system]."² In light of Metricom's complete reversal, the Commission should take its self-serving interference arguments with many grains of salt.

II. Metricom and MCI WorldCom do Nothing to Refute Sirius' Technical Analysis and Provide No Technical Support for Their Claims of Interference

Metricom's and MCI WorldCom's arguments are unresponsive to any of the technical data provided by Sirius in its Supplemental Comments. In the detailed technical exhibits attached to its Supplemental Comments, Sirius demonstrates that its

¹ See Metricom, Inc. Opposition to Petition for Reconsideration, GN Docket No. 96-228, at 3 (filed Mar. 21, 1997) (Metricom's Opposition to the Wireless Cable Association's Petition for Expedited Reconsideration of the Commission's decision not to impose power limitation on the WCS) ("Metricom Opposition") ("While much is said about the alleged interference to be caused by WCS operations if WCS EIRP is not limited, a careful examination of these allegations illustrates that any cases of interference will actually be minimal.")

² Metricom Opposition, at 4-5. See also *id.* at 4 ("[T]he facilities practically need to be co-located for the alleged interference to occur . . . the likelihood of these WCS fixed transmitters being located a mere 300 feet away from a particular downconverter . . . is minimal at best."); *id.* at 5 ("[C]urrently authorized operations already have the potential to create the same problems alleged by the WCA. Despite this potential, there does not

proposed use of terrestrial repeaters at 40 kW EIRP would not cause technical interference to WCS, MDS, MMDS, or ITFS services.³ While not refuting Sirius' showing with any technical analysis of its own, Metricom claims satellite DARS terrestrial repeaters will "cause substantial harm to WCS systems."⁴ Metricom bases its insistence that the Commission impose stringent restrictions on satellite DARS terrestrial repeaters on the fact that these technical requirements were placed on WCS operations three years ago.⁵ However, as Sirius amply demonstrates in its Reply Comments, grafting service rules for one service onto a wholly independent service with distinctly different interference potential would be inappropriate.⁶ The Commission should disregard Metricom's call for reciprocation of its own stringent emissions restrictions and rely on the technical information provided by Sirius and XM Radio.

The Commission should also note that WCS operators have had ample notice and time to plan for satellite DARS terrestrial repeaters. Metricom's primary argument for why the Commission must apply the WCS technical limitations to terrestrial satellite DARS operations is that its has not designed its WCS systems to withstand higher

appear to be any evidence of interference to MDS/ITFS downconverter operations.").

³ See Sirius Satellite Radio Inc. Supplemental Comments, Exhibit 1 & 2 (filed Jan. 18, 2000) ("Sirius Supplemental Comments").

⁴ See Metricom, Inc. Reply Comments, at 3 (filed Mar. 8, 2000) ("Metricom Reply Comments").

⁵ See *id.* (claiming that not imposing the WCS technical requirements on terrestrial DARS operations would be "grossly inequitable," "arbitrary and capricious," and "contrary to fundamental fairness.").

⁶ See Sirius Satellite Radio Inc. Reply Comments, at 12-14 (filed Mar. 8, 2000) ("Sirius Reply Comments").

interference levels.⁷ Sirius has previously documented the lack of interference potential between satellite DARS and WCS in this record,⁸ but would also like to point out that plans to use terrestrial repeaters in the provision of satellite DARS were repeatedly discussed well before the April 1997 WCS auction.⁹ Therefore, the Commission should disregard Metricom's claim that it only relied on the rules in place at the time of the WCS auction when it designed its system. Metricom cannot expect to operate in a regulatory vacuum.¹⁰

III. Interference between Flight Test Receivers and Satellite DARS Repeater Is Improbable

AFTRCC, an association that develops, tests and produces aircraft and space vehicles, operates flight test telemetry stations in the 2360-2390 MHz band. AFTRCC is concerned that its flight test telemetry stations are susceptible to interference from satellite

⁷ Metricom Reply Comments, at 3.

⁸ See Sirius Supplemental Comments, at Exhibit 1.

⁹ See, e.g., Comments of CD Radio, at 94 (filed Sept. 15, 1995) ("Even though CD Radio will employ satellite and frequency diversity to improve its coverage, some terrestrial gap fillers will still be necessary to maximize coverage."); Letter from Richard E. Wiley to Donald H. Gips, Federal Communications Commission, Regarding CD Radio's Request for Pioneer's Preference, PP-24, at 5 (Oct. 2, 1996) ("CD Radio always planned a limited number of terrestrial stations, to be located in a few core urban areas and tunnels."); Reply Comments of CD Radio, at 5 (filed June 27, 1997) ("[T]he Commission's rules applicable to satellite DARS licensees already limit out-of-band interference to adjacent users and these rules are fully applicable to satellite DARS terrestrial repeaters.")

¹⁰ Metricom concedes as much. Metricom Opposition, at 6 ("Because frequencies are becoming more congested with the public's demand for new and innovative services, the Commission should not allow any service providers to merely sit back and complain about potential interference from new, out-of-band sources.").

DARS terrestrial repeaters.¹¹ Sirius recognizes the importance of protecting AFTRCC's operations from interference; however, there is very little risk of interference from either out-of-band emissions or receiver overload from satellite DARS terrestrial repeaters because the equipment for these two services will not be located in close proximity to each other.

Satellite DARS terrestrial repeaters simply are not going to be located in areas where flight test operations are conducted. While flight-test ranges are usually located in "isolate, rural areas,"¹² terrestrial repeaters will be located in dense urban areas. Sirius has presented a plan to operate a limited number of repeaters at up to "46 dBW EIRP (*i.e.*, 40 KW EIRP) at approximately 105 sites in the *urban* cores of 46 cities."¹³

Terrestrial repeaters will only be located in urban areas because the sole purpose of terrestrial repeaters is to overcome satellite signal blockage/multipath caused by obstructions such as large clusters of buildings. Under the Sirius elliptical orbit and time/space/frequency diversity design, there is no need for gap-fillers in rural and remote areas well served by satellite signals. Because flight test operations are not conducted in the centers of urban areas, AFTRCC members will not receive harmful interference from terrestrial repeaters of a satellite DARS system.

¹¹ See Aerospace & Flight Test Radio Coordinating Council Reply Comments, at 2 (filed Mar. 8, 2000) ("AFTRCC Reply Comments").

¹² AFTRCC Reply Comments, at 2 (citation omitted). AFTRCC apparently misattributed the plan to "operate high-power repeaters in 'isolated, rural areas'" to Sirius.

¹³ See Sirius Supplemental Comments, at 3 (emphasis added).

As indicated by AFTRCC, limiting the out-of-band emissions of satellite DARS repeaters to the levels proposed by Sirius and XM Radio (*i.e.*, $75 + 10 \log(P)$, where P is the EIRP of the satellite DARS repeater signals), will provide sufficient protection from satellite DARS out-of-band emissions for telemetry receivers located more than 1 km away.¹⁴ But, Sirius plans no terrestrial repeater located that close. As explained above, Sirius would have no reason to locate its terrestrial repeaters in locations where flight testing may occur.

For similar reasons, AFTRCC's concerns about receiver overload from satellite DARS repeaters are overstated. To limit front-end overload, AFTRCC requests satellite DARS providers be required to coordinate terrestrial repeaters with its members.¹⁵ Because none of the Sirius satellite DARS terrestrial repeaters will be located within many kilometers of any flight test receiver, AFTRCC has no legitimate receiver overload concerns. Accordingly, AFTRCC's request for notification and concurrence prior to installation of terrestrial repeaters is premature and unnecessary.¹⁶

¹⁴ See AFTRCC Reply Comments, at Technical Appendix ("The concern with regard to flight test operations is to achieve a protection level of at least -177dB(W/m²) per 4kHz bandwidth in order to avoid interference with flight test operations. If spurious emissions are kept below the proposed $75 + 10 \log(P)$ level, such protection will be achieved for reasonable separations (*i.e.*, >1 km) between DARS repeater sites and flight test telemetry receive sites.").

¹⁵ See *id.* at 2.

¹⁶ See AFTRCC Reply Comments, at Technical Appendix. Requiring coordination up to the radar horizon distance would be extreme because the line of sight distance could vary from 40 to 80 km. However, due to the geographical separation of satellite DARS terrestrial repeaters from AFTRCC telemetry receivers, there will be no interference to AFTRCC member facilities.

IV. Conclusion

For the foregoing reasons, Sirius urges the Commission not to adopt the proposals contained in the Reply Comments of Metricom, MCI WorldCom, and AFTRCC and expeditiously to adopt rules for the operation of satellite DARS terrestrial repeaters.

Respectfully submitted,

Sirius Satellite Radio Inc.

By: 

Richard E. Wiley
Carl R. Frank
Jennifer D. Wheatley
Melissa A. Reed
of
Wiley, Rein & Fielding
1776 K Street, N.W.
Washington, DC 20006

Its Attorneys

Dated: March 22, 2000

CERTIFICATE OF SERVICE

I, Wanda L. Thorpe, hereby certify that on this 22nd day of March, 2000, I caused copies of the foregoing **Supplemental Reply Comments of Sirius Satellite Radio** to be mailed via first-class postage prepaid mail to the following:

Bruce D. Jacobs
Stephen J. Berman
David Konzcal
Fisher Wayland Cooper Leader
& Zaragoza LLP.
2001 Pennsylvania Avenue, N.W., Ste. 400
Washington, DC 20006

Lon C. Levin
Senior Vice President, Regulatory
XM Satellite Radio Inc.
10802 Park Ridge Boulevard
Reston, VA 20191

M. Scott Johnson
Gardner, Carton & Douglas
1301 K Street, N.W., East Tower #900
Washington, DC 20005

Catherine Wang
William B. Wilhelm, Jr.
Swidler & Berlin, Chartered
3000 K Street, N.W., Suite 300
Washington, DC 20007

Paul J. Sinderbrand
William W. Huber
Wilkinson Barker Knauer, LLP
2300 N Street, N.W., Suite 700
Washington, DC 20037

Cheryl Tritt
Morrison & Forester
2000 Pennsylvania Ave., Ste. 5500
Washington, DC 20006

Gary Klein
Ralph Justus
George Hanover
The Consumers Electronics
Manufacturers Association
2500 Wilson Boulevard
Arlington, VA 22201

Henry L. Baumann
Valerie Schulte
National Association of Broadcasters
1771 N Street, N.W.
Washington, DC 20006

Robert B. Jacobi
Cohn and Marks
1333 New Hampshire Ave., N.W., #600
Washington, DC 20036

Charles T. Morgan
Sr. Vice President
Susquehanna Radio Corp.
140 East Mark Street Corp.
York, PA 17401

William B. Barfield
Thompson T. Rawls, II
1155 Peachtree Street, N.W.
Suite 1800
Atlanta, GA 30309

William K. Keane
Arter & Hadden, LLP
1801 K Street, N.W., Suite 400K
Washington, DC 20006

Robert S. Koppel
MCI WorldCom, Inc.
1133 19th Street, N.W.
Washington, DC 20036

Thomas P. Stanley*
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, S.W., Room 3-C460
Washington, D.C. 20554

John Reiser*
International Bureau
Federal Communications Commission
445 12th Street, S.W., Room 7-B438
Washington, D.C. 20554

Rockie Patterson*
International Bureau
Federal Communications Commission
445 12th Street, S.W., Room, 6-B524
Washington, D.C. 20554

Larry W. Olson*
International Bureau
Federal Communications Commission
445 12th Street, S.W., Room 7-A669
Washington, D.C. 20554

Larry S. Solomon
Shook, Hardy & Bacon, LLP
600 14th Street, N.W., Suite 800
Washington, DC 20005

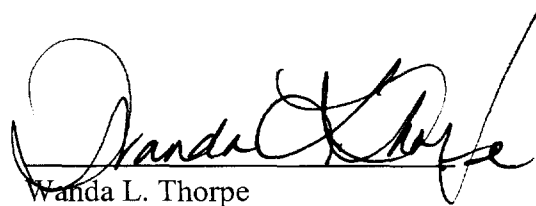
Ronald F. Netro*
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, S.W., Room 3-C163
Washington, DC 20554

Rosalee Chiara*
International Bureau
Federal Communications Commission
445 12th Street, S.W., Room 6-A521
Washington, D.C. 20554

Linda L. Haller*
International Bureau
Federal Communications Commission
445 12th Street, S.W., Room, 6-C747
Washington, D.C. 20554

Keith Larson*
Mass Media Bureau
Federal Communications Commission
445 12th Street, S.W., Room 2C420
Washington, D.C. 20554

* *via hand delivery*



Wanda L. Thorpe